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Product Specifications - Viral Antigens

HIV-1_{IIIB} gp120 Protein

Source:	Purified by affinity chromatography from inactivated, concentrated, conditioned medium of HUT78 (clone 6D5) cells chronically-infected with the HIV-1_{IIIB} isolate. The final step in the purification is by reverse-phase HPLC using a C-18 column.
Catalog Number:	5423
Quantity:	100 µg in PBS
Inactivation Procedure:	Triton X-100 was added to the conditioned medium to a final concentration of 0.5%. This procedure has been shown to inactivate HIV-1 completely.
Storage:	Store at -70°C
Purity:	More than 95% pure when analyzed by SDS-PAGE. The product is free of detectable Endotoxin.

HIV-1_{451} gp120 Protein

Source:	Purified by affinity chromatography from inactivated, concentrated, conditioned medium of HUT78 (clone 6D5) cells chronically-infected with HIV-1_{451} isolate. The final step involved reverse phase HPLC chromatography.
Catalog Number:	5424
Quantity:	100 µg in PBS
Inactivation Procedure:	Triton X-100 was added to the conditioned medium to a final concentration of 0.5%. This procedure has been shown to inactivate HIV-1 completely.
Storage:	Store at -70°C
Purity:	More than 95% pure when analyzed by SDS-PAGE. The preparation is free of Endotoxin.

HIV-1_{IIIB} p24 Protein

Source:	Purified by immunoaffinity and HPLC from the conditioned medium of HIV-1_{IIIB} infected HUT78 cells.
Catalog Number:	5425
Quantity:	100 µg in PBS
Inactivati n Procedure:	The cells were lysed in 0.5% Triton X-100. This has shown to inactivate HIV-1.
Storage:	Store at -70°C
Purity:	95% pure by Coomassie blue stained SDS-PAGE gels. The protein is free of Endotoxin.

HIV-1_{IIIB} gp160 Protein (Oligomeric gp140)

Source:	The conditioned medium of HIV-1_{IIIB} infected cells. The gp160 is secreted in the medium. Purified by immunoaffinity chromatography using mouse monoclonal antibody to HIV-1 gp41.
Catalog Number:	5426
Quantity:	1 µg in PBS
Inactivation Procedure:	The medium was inactivated with 0.5% Triton X-100. This has been shown to inactivate HIV-1_{IIIB}.
Storage:	Store at -70°C
Purity:	More than 95% pure by SDS-PAGE. The purified product is ~140K Daltons in size and is oligomeric (mostly trimers and dimers) It is probably truncated at the transmembrane domain. However the c-terminal sequence is not determined.

HIV-1_{451} gp160 Protein (Oligomeric gp140)

Source:	The conditioned medium of HIV-1_{451} infected cells. The gp160 is secreted in the medium. Purified by immunoaffinity chromatography using mouse monoclonal antibody to HIV-1 gp41.
Catalog Number:	5427
Quantity:	100 µg in PBS
Inactivation Procedure:	The medium was inactivated with 0.5% Triton X-100. This has been shown to inactivate HIV-1_{IIIB}.
Storage:	Store at -70°C
Purity:	More than 95% pure by SDS-PAGE. The final product is truncated and runs as a 140K protein in SDS-PAGE. It is probably at the transmembrane domain. The purified gp160 is oligermic (mostly trimer and dimers).

SIV_{mac251} gp120 Protein (Oligomeric gp140)

Source:	The conditioned medium of SIV mac251 infected HUT78 cells. The gp160 is secreted in the medium. Purified by immunoaffinity chromatography using mouse monoclonal antibody to HIV-1 gp41.
Catal g Number:	5428
Quantity:	1 µg in PBS
Inactivation Procedure:	Triton X-100 was added to the conditioned medium to a final concentration of 0.5%. This procedure has been shown to completely inactivate HIV-1 and SIV.
Storage:	Store at -70°C
Purity:	More than 95% pure when analyzed by SDS-PAGE and is free of Endotoxin.

Product Specifications - TAT

- TAT INFO

Product Specifications - Cytokines

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AIDSWEEKLY plus

Other Issues

Conference Coverage (Vancouver AIDS Conference): Vaccine Elicits Serum, Mucosal Antibodies Against All HIV Strains

AIDSWEEKLY Plus, *16 September 1996*
Daniel J. DeNoon, Senior Editor

Eight years in the making, a novel HIV immunogen can elicit antibodies that neutralize patient isolates from all over the world.

Depending on how it is formulated and administered, the immunogen can stimulate either serum or mucosal immune responses in animal studies.

"We hope, if all goes well, to do a Phase I clinical trial in HIV seronegatives," said Thomas C. VanCott of the Henry M. Jackson Foundation, Rockville, Maryland.

VanCott described the immunogen, called oligomeric gp160 or ogp160, in a presentation to the XI International Conference on AIDS, held July 7-12, 1996, in Vancouver, British Columbia, Canada.

"The immunogen was first developed by Dr. V. Kalyanaraman at Advanced Bioscience Laboratories about 8 years ago," VanCott said. "It exists as [HIV envelope precursor glycoprotein] gp160 oligomers, tetramers, and dimers but there's some monomer fractions also."

Laboratory studies showed that ogp160 had a number of attractive qualities as an immunogen:

- ogp160 reacts with a large number of monoclonal antibodies known to neutralize HIV.
- ogp160 reacts with sera from patients infected with HIV-1 from all known clades - including the highly divergent group O strains.
- ogp160 is more reactive with serum from HIV infected patients than HIV envelope subunit proteins.
- ogp160 is highly reactive with IgG and IgA antibodies from the sera of patients with acute HIV infection.

When mice and rabbits were inoculated with ogp160 they produced antibodies that recognized natural forms of the HIV gp120 envelope glycoprotein.

Antibodies elicited by the immunogen had "profound neutralizing activity against laboratory strains and can also neutralize some primary isolates," VanCott said.

Because HIV is most frequently transmitted across mucosal surfaces, VanCott and colleagues set out to formulate ogp160 to elicit mucosal immunity.

"We first wanted to have an understanding of the local immune responses during natural HIV infection," VanCott said. "In collaboration with Walter Reed [Army Institute of Research] we collected cervical secretions, vaginal washes, nasal washes, and parotid saliva from HIV infected and uninfected women. We measured IgG and IgA specific responses and also total responses and assessed functional capacity."

Encouragingly, the researchers found gp160-specific IgG antibodies in all of these mucosal compartments. Titers of these antibodies were about two orders of magnitude lower in the genital tract than in serum, and another order of magnitude lower for nasal and parotid secretions.

"It's a different story, however, when you look at the IgA specific responses [to gp160]," VanCott said.

Titers of gp160-specific IgA antibodies generally were two logs lower than IgG antibodies in all compartments. But while the percentage of IgG antibodies specific for gp160 was about the same across all compartments, there was a wide variation in the percentage of gp160-specific IgA antibodies.

About 90 percent of IgA antibodies in cervical secretions and 95 percent of IgA antibodies in nasal washes recognized gp160, while these percentages were only 55 percent in vaginal washes and only 38 percent in parotid saliva.

"There seems to be a defect in IgA specific responses to gp160 during natural infection, or an enhanced IgG response,"

VanCott concluded. "In vaginal washes from three of the strongest IgG responders, we do see reductions in [HIV antigen] p24 greater than 10-fold [over seronegative women], suggesting that IgG antibodies in vaginal washes are neutralizing."

In animal experiments, mice immunized via subcutaneous injection with ogp160 in a variety of adjuvants produced no gp160-specific IgG or IgA.

But when ogp160 was formulated into either proteosomes or liposomes and administered intramuscularly with monophosphoryl lipid A (MPL), strong gp160-specific IgG and IgA antibody responses were seen in all mucosal compartments.

VanCott made several conclusions from these studies:

- ogp160 is immunogenic when delivered parentally to mice and rabbits and rhesus macaques.
- ogp160 binds native forms of gp120.
- ogp160 neutralizes multiple laboratory HIV isolates.
- ogp160 can neutralize primary HIV isolates.
- The local immune response in HIV infected women is predominantly IgG in multiple simultaneously sampled mucosal compartments.
- ogp160 given intranasally can give strong IgG and IgA responses in vaginal wash and other mucosal washes that do have some functional capacity against HIV.

"Oligomeric gp160 formulated with MPL and administered intramuscularly elicits an antibody response qualitatively similar to that obtained during natural HIV-1 infection and distinct from responses obtained with other monomeric HIV-1 envelope vaccines studied to date with respect to preferential recognition of natively folded HIV envelope and neutralizing activity against some HIV-1 isolates," VanCott and colleagues wrote in their presentation abstract.

In preparation for human studies, the researchers are currently conducting both systemic and mucosal challenge experiments in the chimpanzee/HIV and macaque/SHIV animal models of HIV infection.

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